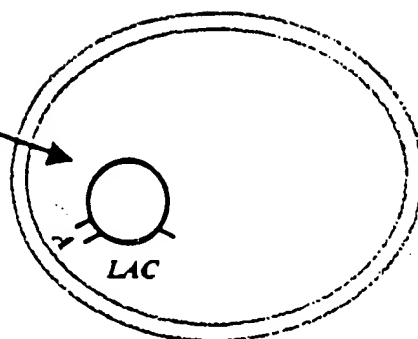
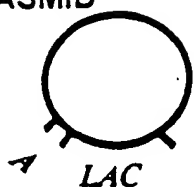
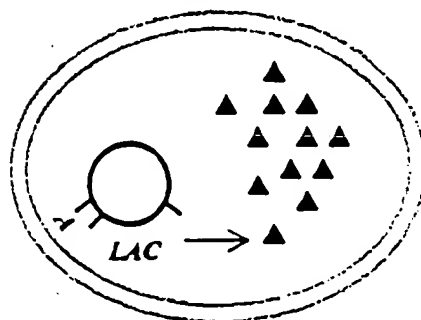


PLASMID



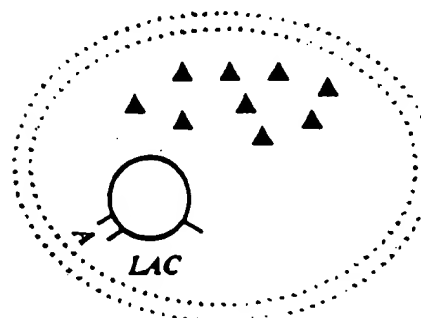
+ NISIN

LACTASE  
INDUCTION



+ 35 - 50%  
ETHANOL

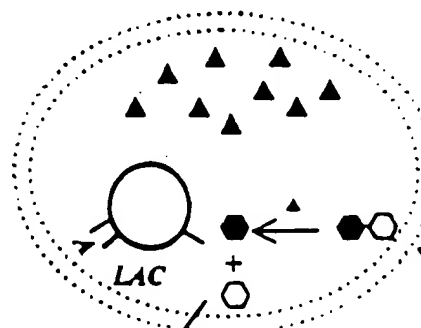
PERMEABILIZATION



MILK



LACTOSE  
HYDROLYSIS



GLUCOSE

GALACTOSE

LACTOSE

FIG. 1

0543131 040400

004040 " T 23 T 23450

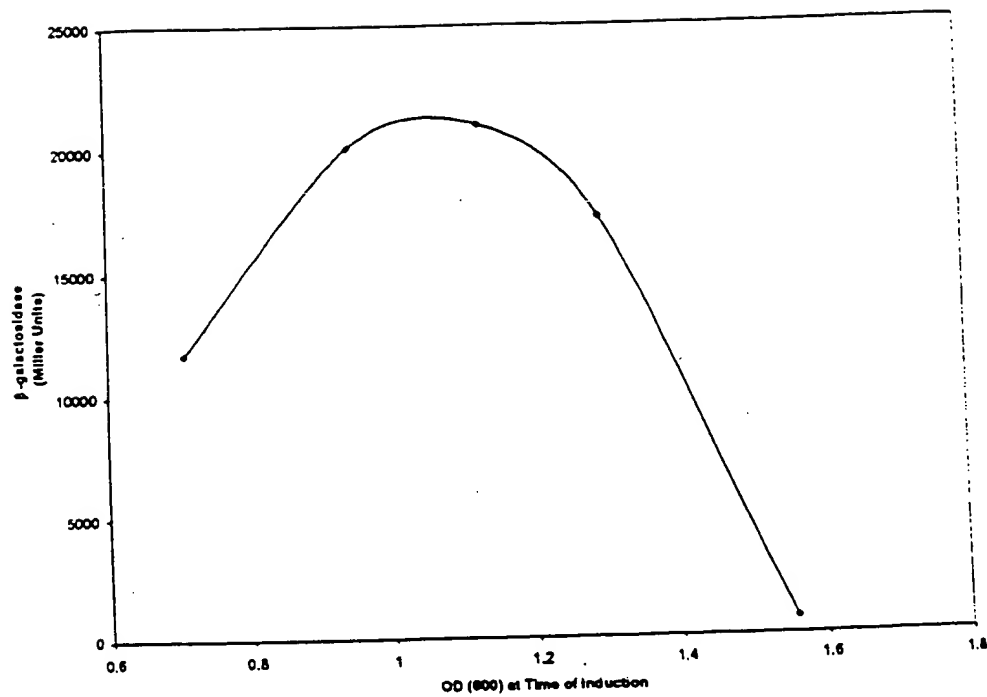


FIG. 2

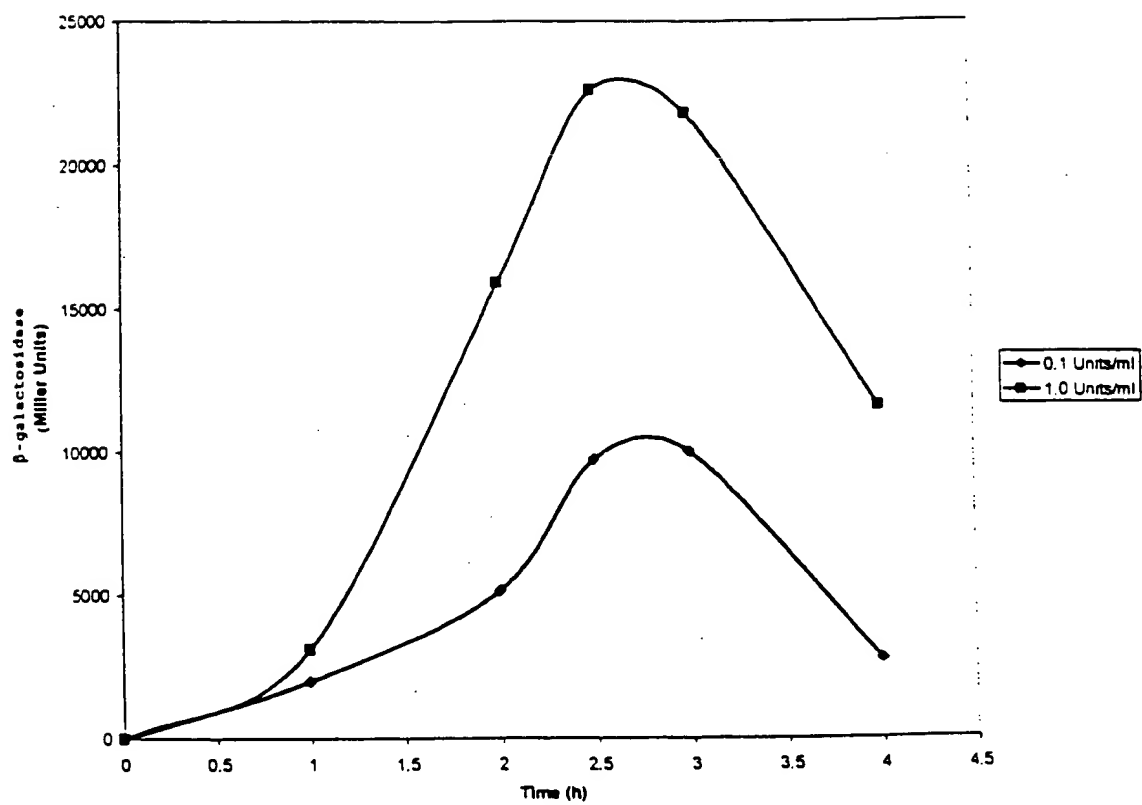


FIG. 3

004040 " T 004050

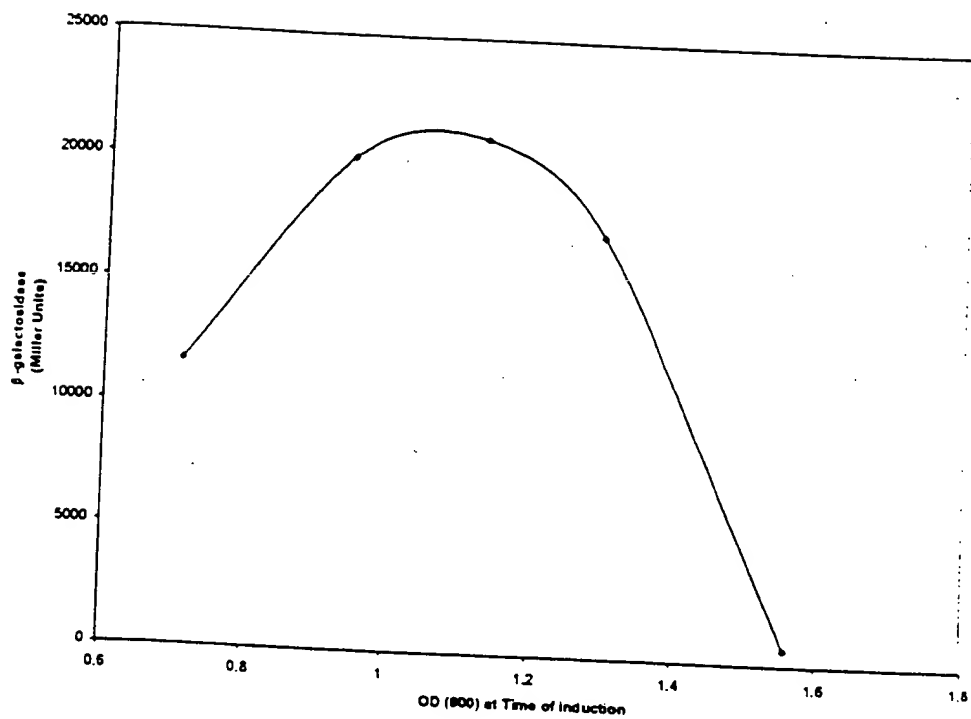


FIG. 4

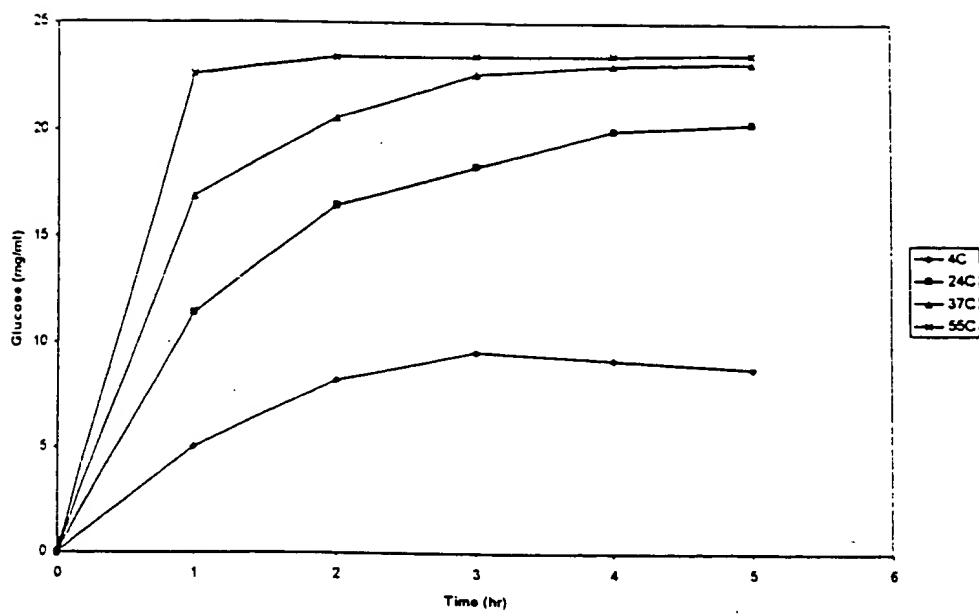


FIG. 5

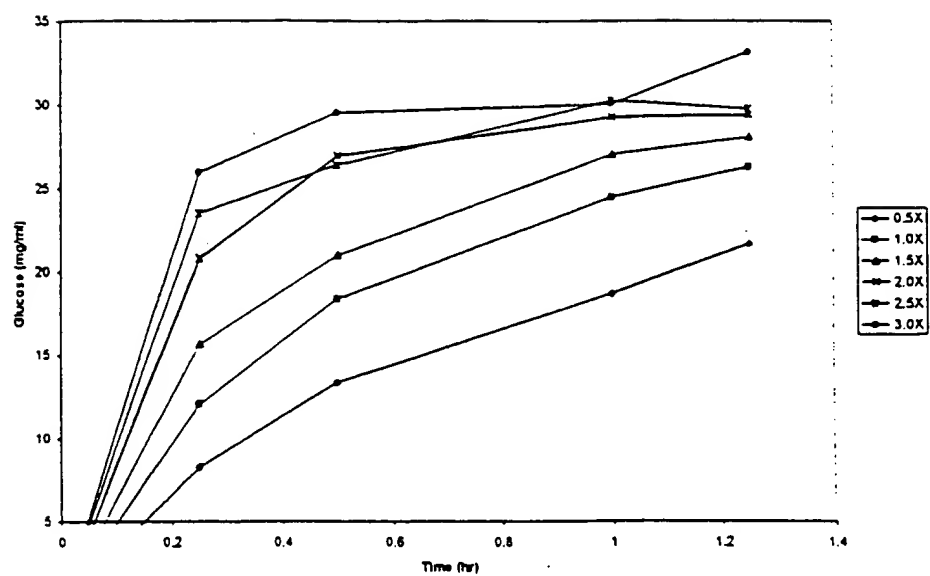


FIG. 6

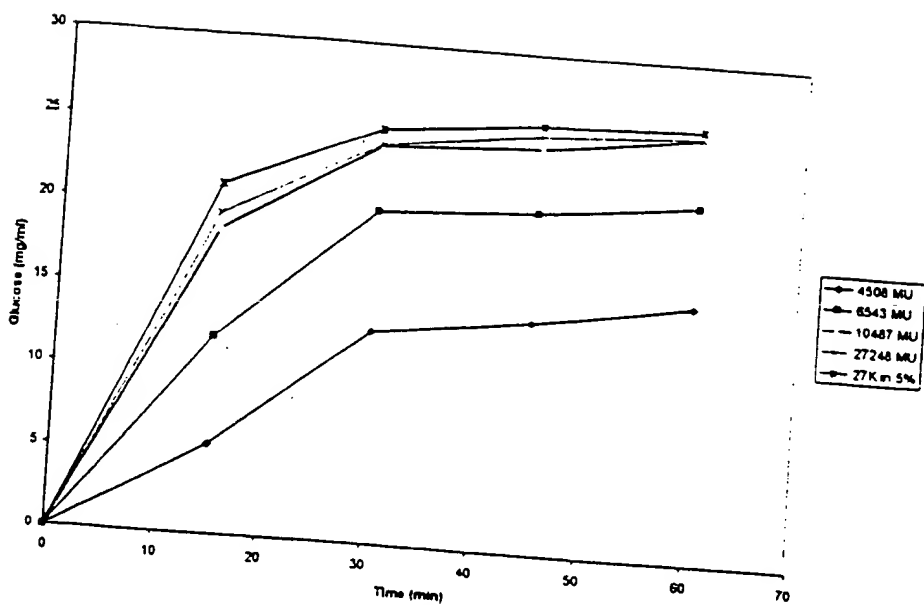


FIG. 7

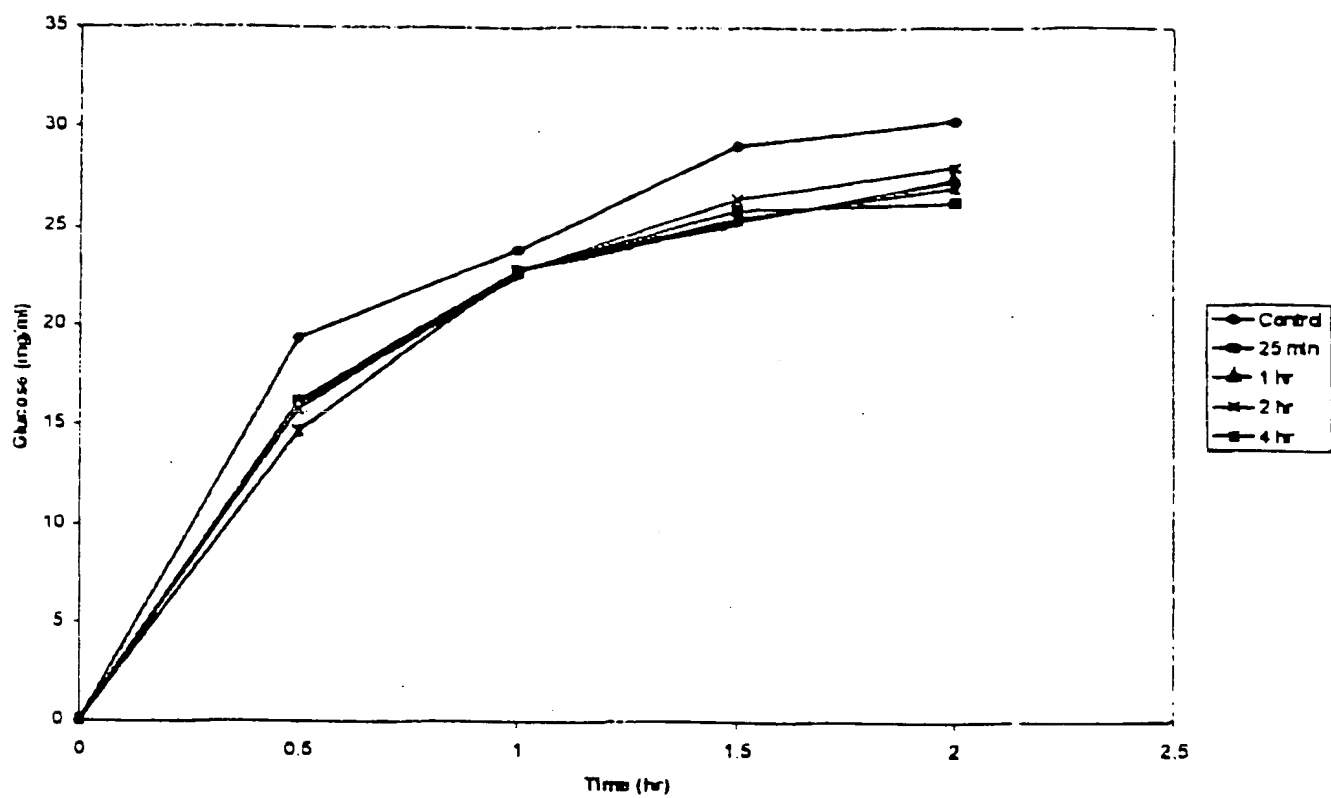


Figure 8.



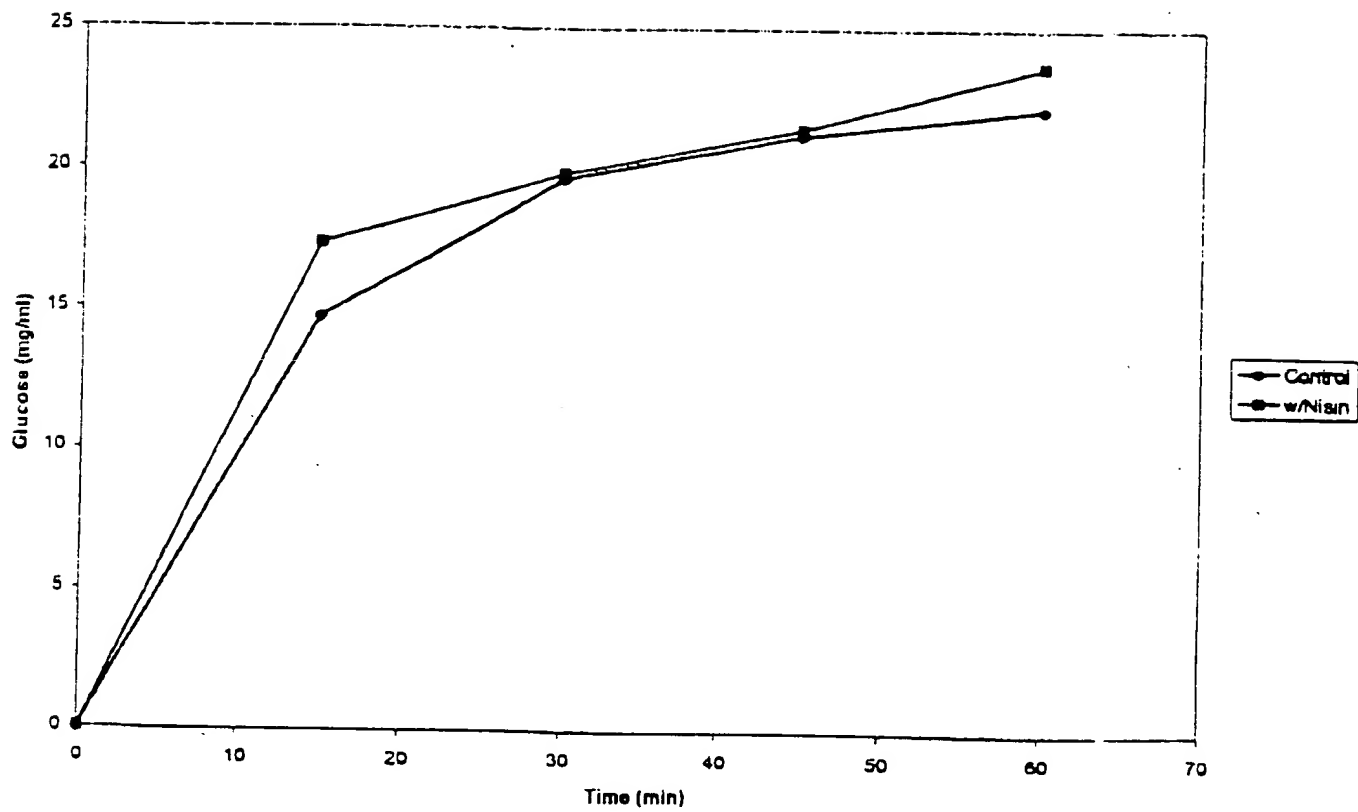


Figure 9.

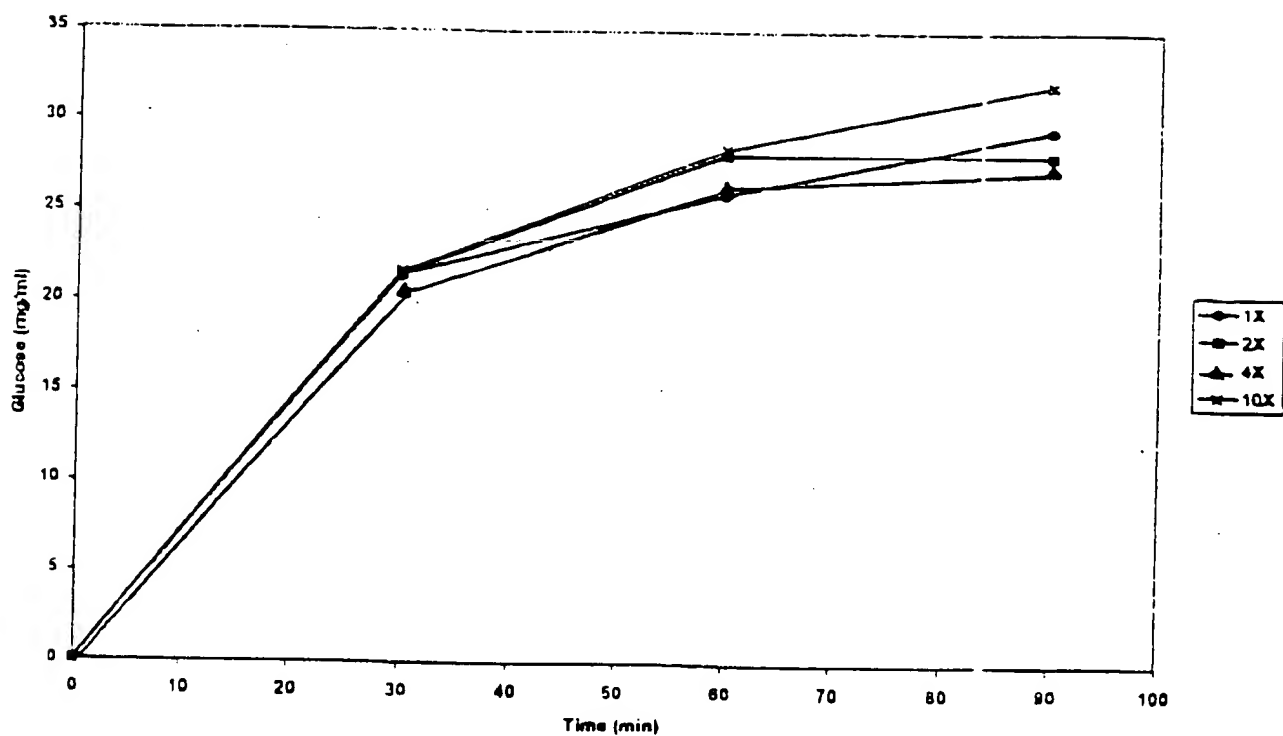


Figure 10.

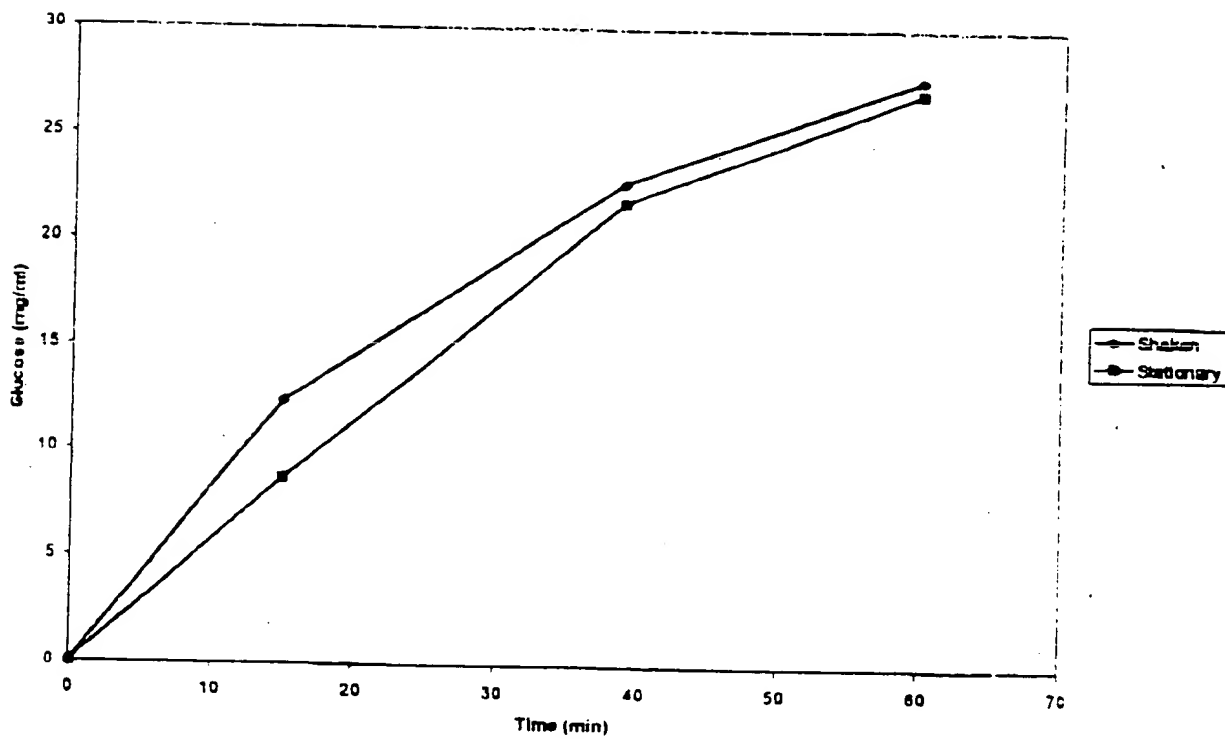


Figure 11.

# COMPARISON OF LACTOSE HYDROLYSIS IN SKIM MILK BY *L. lactis* (nisA::lacZst) MICROCARRIERS AT 4°C AND 55°C VERSES *St. thermophilus* C3 MICROCARRIERS AT 55°C



ALL PERMEABILIZED CELLS (MICROCARRIERS)  
 SUSPEND OD<sub>600</sub> = 1.55 IN SKIM MILK

# EFFECTS OF VARYING L.LACTIS (nisA::lacZ) MICROCARRIER CONCENTRATION ON SKIM MILK LACTOSE HYDROLYSIS AT 4 C

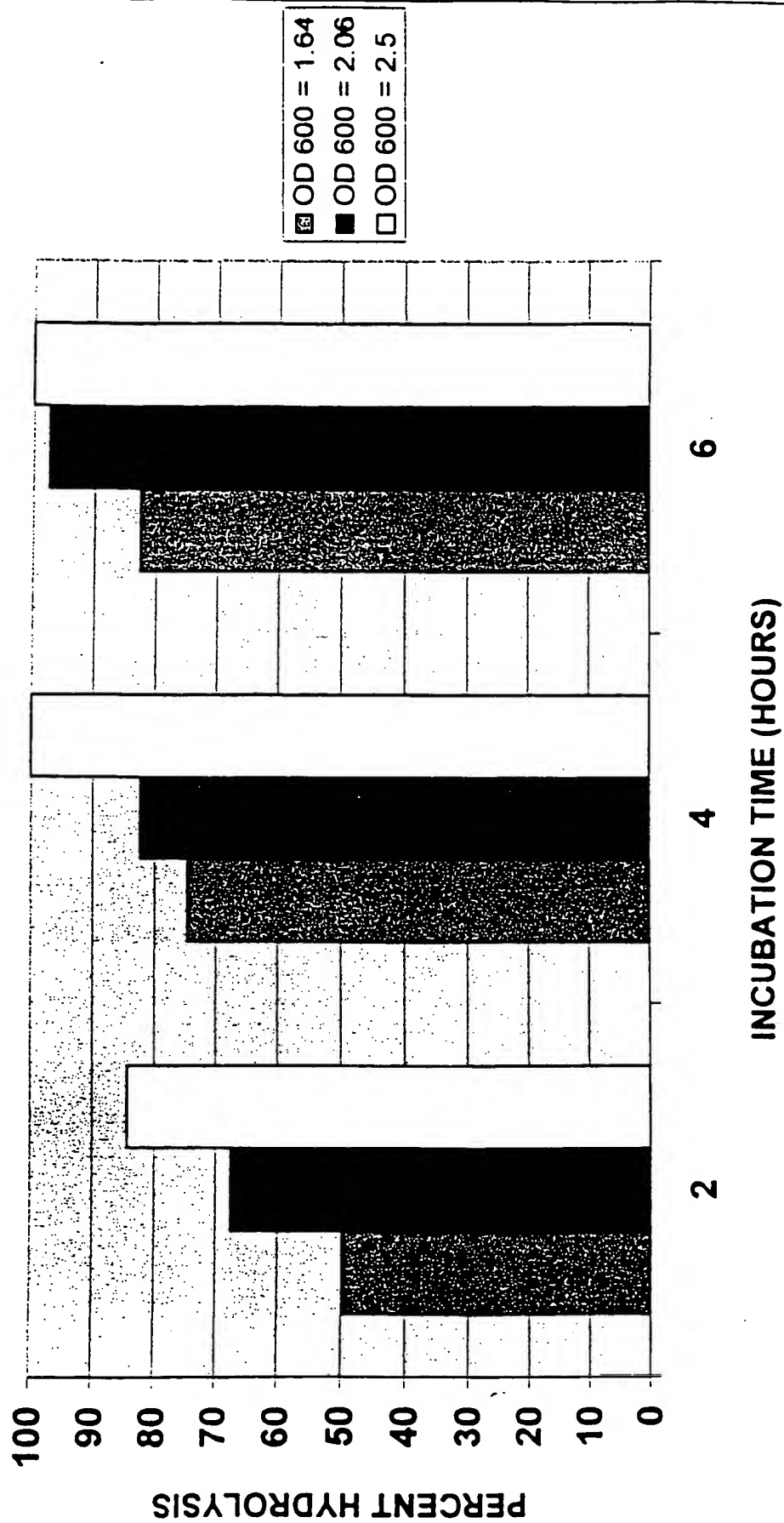


FIG. 13

004040" FEB 55

# EFFECTS OF STIRRING ON MILK LACTOSE HYDROLYSIS BY LACTASE-MICROCARRIERS AT 55° C

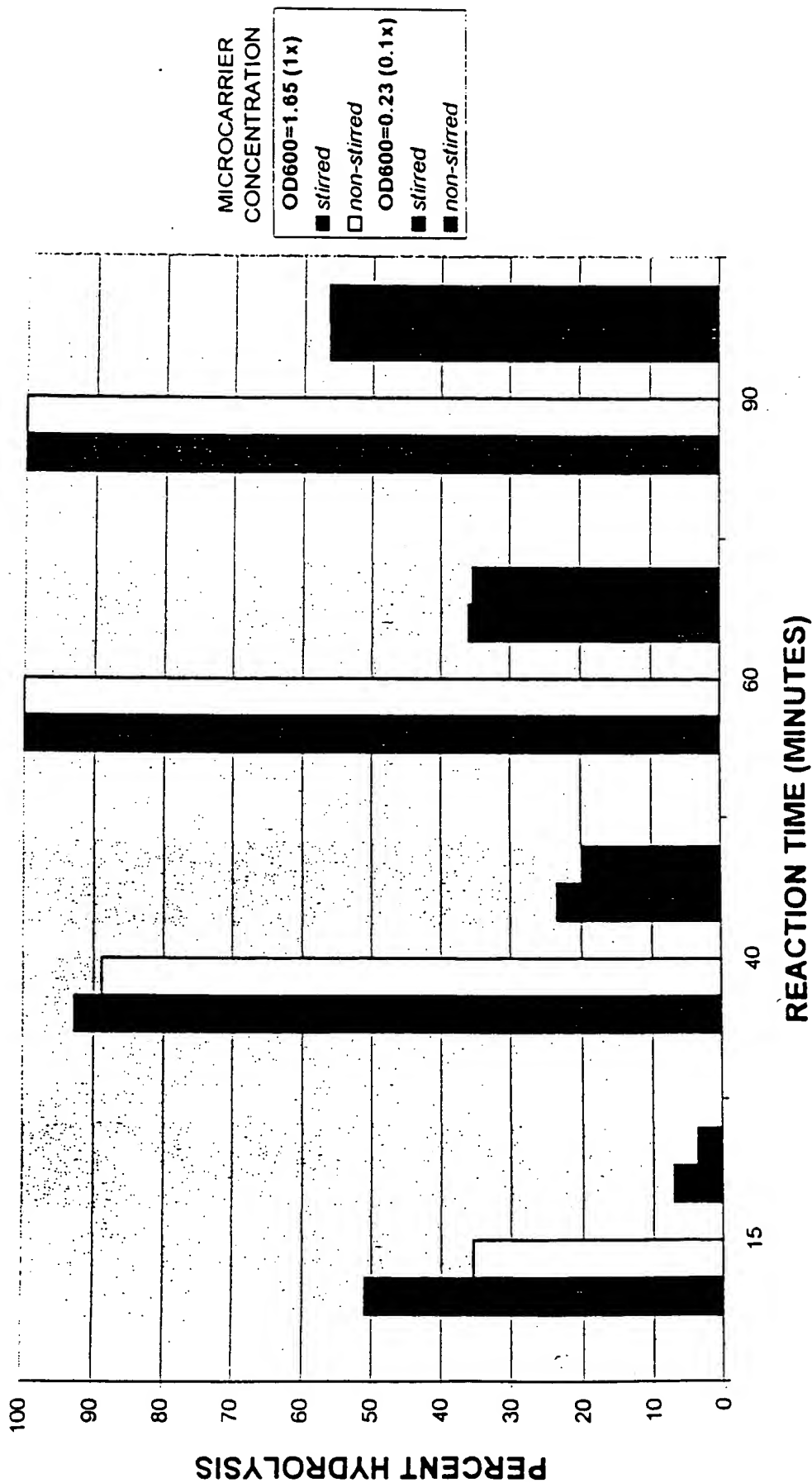


FIG. 14

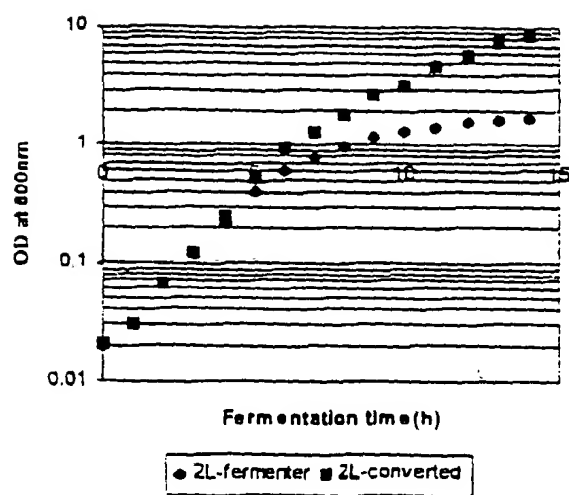


Figure 15

004040" F24560

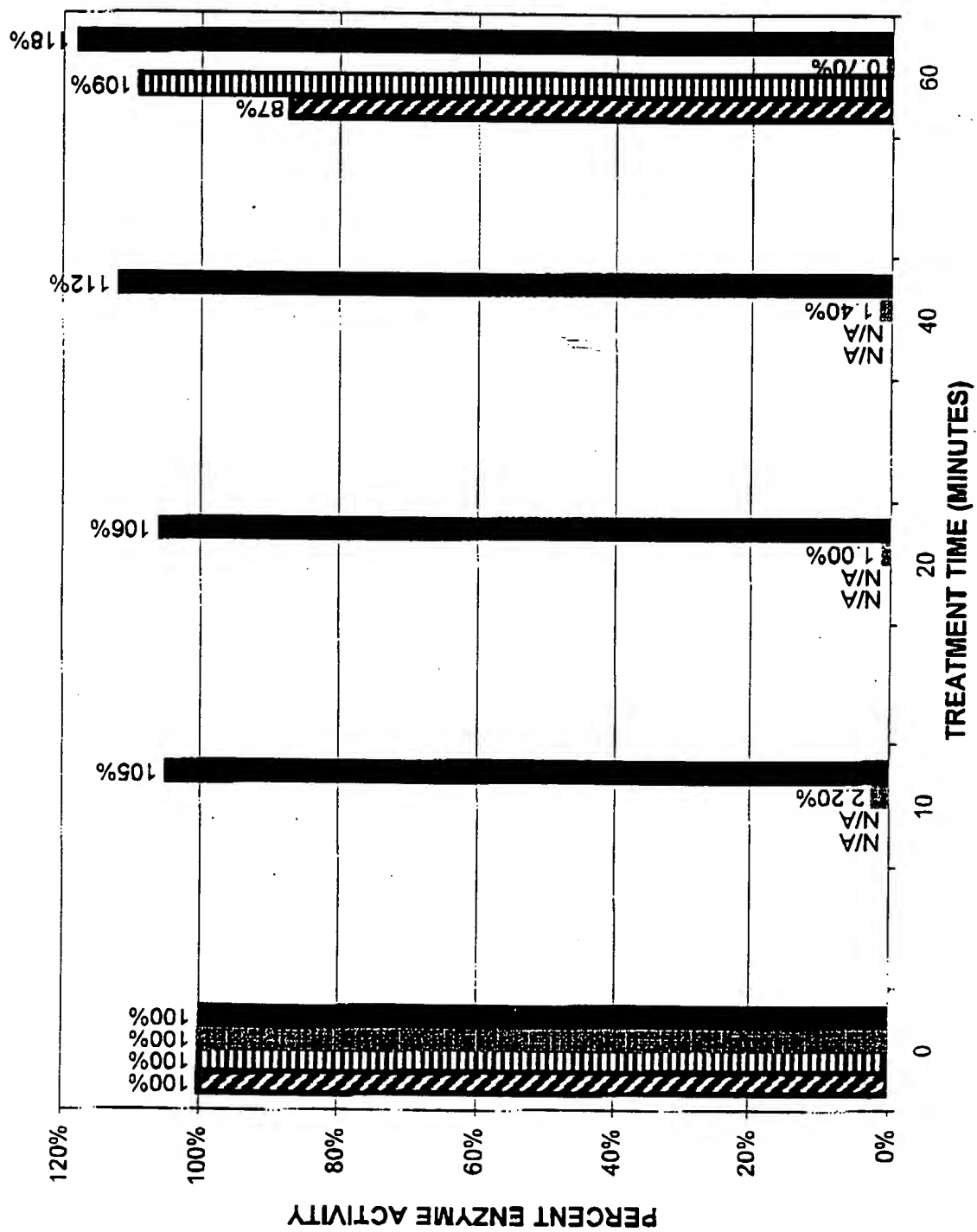


Fig. 16



0044040" 42124500

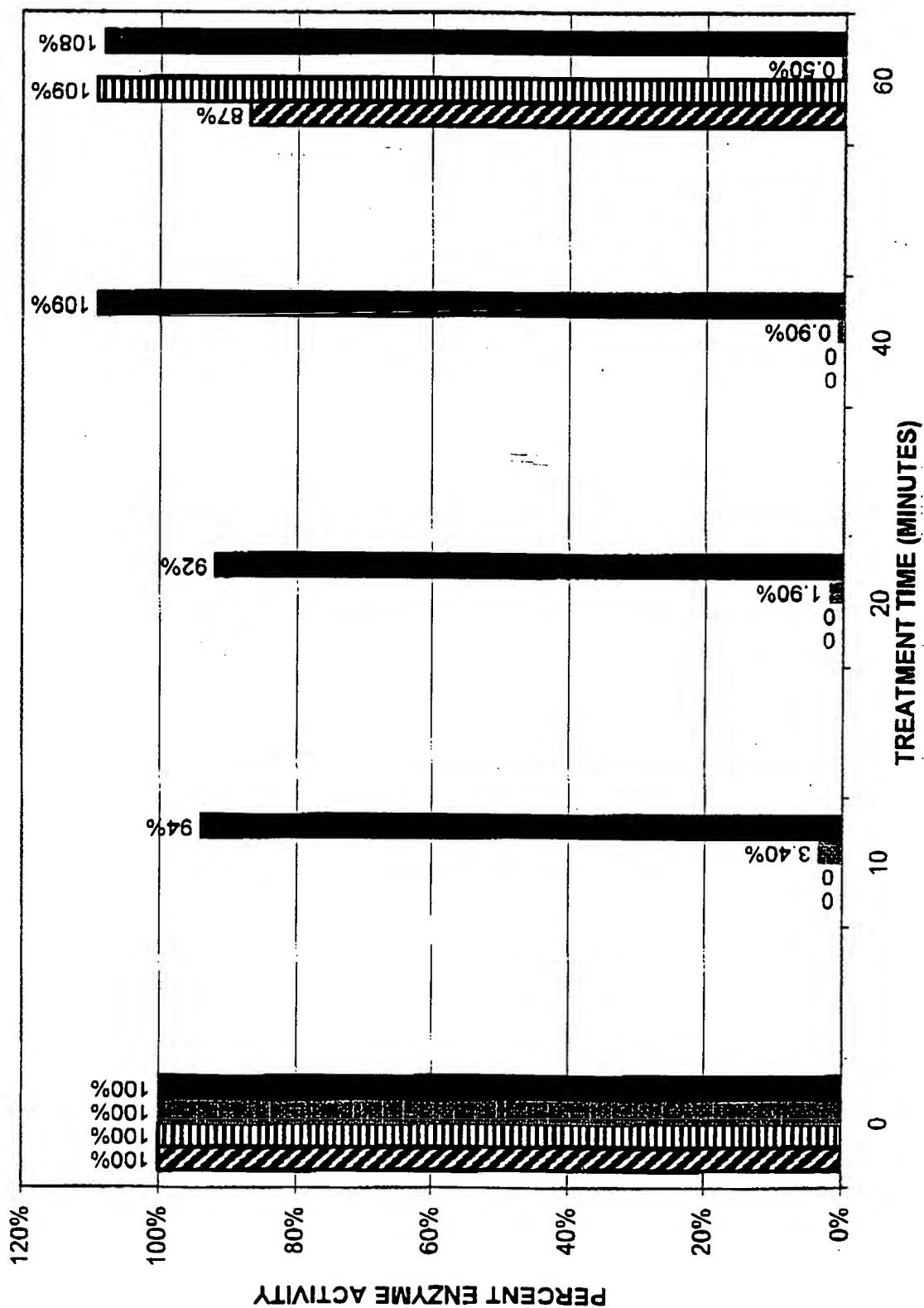


Fig. 17